Title (en)
A digital quadrature phase detection circuit.

Title (de)
Eine digitale Schaltung zur Quadraturphasenfeststellung.

Title (fr)
Un circuit numérique de détection de phase en quadrature.

Publication
EP 0488624 A2 19920603 (EN)

Application
EP 91310833 A 19911125

Priority
JP 31862890 A 19901124

Abstract (en)
An analog quadrature-modulated signal is converted into a digital signal by an A/D converter (1) using a sampling clock having a frequency four times higher than the carrier of the quadrature modulated signal. The digital signal is delayed by one sampling slot in each of four delay circuits (2-5) connected in series to the A/D converter. The output of the A/D converter and that of the fourth delay circuit are multiplied by -1/2 by respective digital weighting circuits (6,7), and the multiplied outputs together with the output of the second delay circuit are added together in an adder (8) to generate an I component (in-phase) signal. The output of the first delay circuit is multiplied by -1 by another weighting circuit (10) and this multiplied output and the output of the third delay circuit are added together in another adder (11) to generate a Q component (quadrature phase) signal. The I and Q signals are held in latches (9,12) clocked at one quarter of the sampling clock rate. <IMAGE>

IPC 1-7
H04L 27/22

IPC 8 full level
H03D 3/00 (2006.01); **H04L 27/22** (2006.01); **H04L 27/233** (2006.01); H03C 3/02 (2006.01)

CPC (source: EP US)
H04L 27/2331 (2013.01 - EP US); **H04L 27/2338** (2013.01 - EP US); H03C 3/02 (2013.01 - EP US); H03D 3/007 (2013.01 - EP US)

Cited by
GB2307154A; GB2307154B; US5905767A; US6104762A

Designated contracting state (EPC)
DE FR GB IT NL SE

DOCDB simple family (publication)
EP 0488624 A2 19920603; **EP 0488624 A3 19921014**; **EP 0488624 B1 19970820**; AU 642373 B2 19931014; AU 8805791 A 19920528; CA 2056021 A1 19920525; CA 2056021 C 19960305; DE 69127348 D1 19970925; DE 69127348 T2 19980319; JP 2581306 B2 19970212; JP H04192605 A 19920710; US 5157344 A 19921020

DOCDB simple family (application)
EP 91310833 A 19911125; AU 8805791 A 19911122; CA 2056021 A 19911122; DE 69127348 T 19911125; JP 31862890 A 19901124; US 79720091 A 19911125